

that points to a first memory location where a first input flow is located, said first input flow allocated to said first user, said first input flow having a first input rate; and

b) a second pipeline stage that:

i) retrieves

one or more parameters that describe said first input rate so that it can be determined if said sending of said first packet conforms to said first input rate

ii) while

said first pipeline stage retrieves a second input flow identifier that points to a second memory location where a second input flow is located, said second input flow allocated to said second user, said second input flow having a second input rate, said retrieving of a second input flow identifier in response to a second packet being sent from said second user to said network.

14. (New) The apparatus of claim 13 further comprising a memory for storing said input flow identifier, said memory coupled to said first pipeline stage.

15. (New) The apparatus of claim 14 wherein said memory further comprises a ternary content addressable memory (TCAM).

16. (New) The apparatus of claim 15 wherein said first packet further comprises a header and said TCAM is configured as a lookup table that provides said first input flow identifier in response to said first pipeline stage providing, as an input to said TCAM lookup table, at least a portion of information found within said header.

al 17. (New) The apparatus of claim 13 further comprising a register that stores a control label, said register coupled to said first and second pipeline stages, said first packet having a header, said control label having information found within said header.

18. (New) The apparatus of claim 17 wherein said information further comprises a Source Port (SP) associated with an Internet Protocol (IP) header.

19. (New) The apparatus of claim 17 wherein said information further comprises a Destination Port (DP) associated with an Internet Protocol (IP) header.

20. (New) The apparatus of claim 17 wherein said information further comprises a Source Address (SA) associated with an Internet Protocol (IP) header.

21. (New) The apparatus of claim 17 wherein said information further comprises a Destination Address (DA) associated with an Internet Protocol (IP) header.

22. (New) The apparatus of claim 17 wherein said information further comprises a Next Hop Address (NHA) associated with an Internet Protocol (IP) header.

23. (New) The apparatus of claim 17 wherein said information further comprises Layer 2 information.

24. (New) The apparatus of claim 23 wherein said information further comprises a Data Link Connection ID (DLCI) associated with a Frame Relay packet.

25. (New) The apparatus of claim 17 wherein said control label further comprises control information formatted by a packet aggregation layer.

26. (New) The apparatus of claim 25 wherein said control information further comprises a packet identifier that identifies where said first packet may be found within a packet buffer.

27. (New) The apparatus of claim 25 wherein said control information further comprises a length indicator that indicates the size of said first packet.
28. (New) The apparatus of claim 13 wherein said one or more parameters that describe said first input rate further comprise a token number and a token rate, wherein said token number corresponds to an amount of data, wherein said token rate corresponds to a number of tokens that are to be added to said token number per unit of time.
29. (New) The apparatus of claim 13 wherein said first input flow further comprises a priority parameter that describes the priority of said first packet within said network.
30. (New) The apparatus of claim 29 wherein said priority parameter further comprises a Type of Service (TOS) value to be placed into a header of said first packet prior to entry of said first packet into said network.
31. (New) The apparatus of claim 13 wherein said first input flow further comprises a memory pointer that points to a third memory location where said one or more parameters that describe said first input rate are located.
32. (New) A method for regulating traffic offered to a network by a first user of said network and a second user of said network, said method comprising:

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a. retrieving, in response to a first packet being sent from said first user to said network, a first input flow identifier that points to a first memory location where a first input flow is located, said first input flow allocated to said first user, said first input flow having a first input rate; and

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b. retrieving one or more parameters that describe said first input rate so that it can be determined if said sending of said first packet conforms to said first input rate

while retrieving

a second input flow identifier that points to a second memory location where a second input flow is located, said second input flow allocated to said second user, said second input flow having a second input rate, said retrieving of a second input flow identifier in response to a second packet being sent from said second user to said network.

33. (New) The method of claim 32 wherein said first input flow further comprises a pointer to a third memory location where said one or more parameters that describe said first input rate are located.

34. (New) The method of claim 33 further comprising retrieving said first input flow with said first input flow identifier and using said pointer to said retrieve said one or more parameters that describe said first input rate.

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35. (New) The method of claim 32 wherein said one or more parameters that describe said first input rate further comprise a token number and a token rate, wherein said token number corresponds to an amount of data, wherein said token rate corresponds to a number of tokens that are to be added to said token number per unit of time.

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36. (New) The method of claim 35 further comprising multiplying said token rate by an elapsed time between said sending of said first packet and a sending of a third packet from said first user, said third packet sent immediately prior to said first packet in regards to a sequence of packets sent by said first user.

37. (New) The method of claim 36 further comprising adding said token number to said multiple of said token rate and said elapsed time in order to determine a number of tokens that corresponds to an amount of data that conforms to said first input rate.

38. (New) The method of claim 32 further comprising, in order to said determine if said sending of said first packet conforms to said first input rate,